Marine Weather Services

Vision

To meet safety needs through ready access to accurate, timely, easily understood and technologically advanced products, forecasts, and warnings. These activities and advances in science and technology will provide the means by which the NWS will meet its strategic vision.

Concept of Operations

The planned activities will focus on three areas:

- ✓ Enhance operational marine and tropical cyclone services with emphasis on gridded and graphical products,
- ✓ Improve marine forecast process, and
- ✓ Maintain an active customer outreach program.

Development will continue for AWIPS and the National Center Advanced Weather Interactive Processing System (NAWIPS). These critical systems will provide new and enhanced capabilities, and new data sets to support marine and tropical product generation. New science and technology plans will be implemented to increase forecast and warning accuracy, and to meet our customer needs for ready access to easily understood information.

Customer and Partner Requirements

Marine and Coastal Services Requirements

- ✓ Issue swell direction and period forecasts for coastal, offshore, Great Lakes, and high seas marine zones
- ✓ Issue probabilistic confidence level of marine forecasts
- ✓ Provied early and accurate port or harbor specific forecasts and warnings
- ✓ Integrate National Ocean Service (NOS) Physical Oceanographic Real Time System (PORTS) data with weather information and forecasts
- ✓ Offer marine-only weather radio

- ✓ Provide regularly spaced grid of marine observations in all coastal and offshore areas
- ✓ Offer observations for wave period, swell height, direction and period, and visibility

Tropical Cyclone Services Requirements

- ✓ Increased accuracy of tropical cyclone track and intensity.
- ✓ Improved storm surge forecasts.
- ✓ Increased accuracy of 34-, 50- and 64-knot wind radii.
- ✓ Improved tropical cyclone quantitative precipitation estimates.

GPRA Performance Measures

GPRA Goal	1998 - 2002 baseline	2003	2004
Hurricane Forecast Track Error (48 hrs.)	133 nautical miles	130 nautical miles	129 nautical miles
Marine Wind Speed Forecasts - Accuracy	0.53 equitable skill score	0.54 equitable skill score	0.54 equitable skill score
Marine Wave Height Forecasts - Accuracy	0.65 equitable skill score	0.66 equitable skill score	0.66 equitable skill score

Link to Science and Technology Infusion Plan

Tropical Cyclones

Supports the vision of providing timely and accurate tropical cyclone products using cuttingedge technology in a cost effective manner, improving the economic value of tropical cyclone information, decreasing tropical cyclone related fatalities, and fulfilling the STIP goal of decreasing the 48-hour mean track error.

Maritime Wind and Wave Warnings

Supports the mission of providing current and accurate information for decision-making by marine and coastal interest on or near U.S. coastal waters, open oceans, and the Great Lakes. These warnings ensure the safety of life and the protection of property. This warning effort increases marine wind and wave forecast skills toward achieving STIP goals.

Product and Service Changes

- Graphical Hurricane Local Statement PDD available from: **http://products.weather.gov/**.
- Marine Point Matrices PDD not yet available. Feedback from second to third quarter, FY 04.

Milestones by Quarter

1st Quarter

- Release web training for marine wave forecasting. (Milestone met, 1st quarter)

2nd Quarter

- Release plan for populating NDFD with Tropical Cyclone force winds. (Milestone met, 2nd quarter)
- Establish a volunteer marine observation program for recreational and small commercial mariners. (Milestone met, 2nd quarter)

3rd Quarter

- Increase NWS Tropical Cyclone Program Outreach to Spanish-speaking community. (Milestone met, 3rd quarter)
- Launch a National Rip Current Outreach Program. (Milestone met, 3rd quarter)
- Prototype a Tropical Cyclone Watch/Warning summary product suitable for Emergency Alert System. (Milestone met, 3rd quarter)
- Expand NDFD into marine areas. (Milestone met, 3rd quarter)
- Begin a phased in implementation of graphical Hurricane Local Statement (Milestone met, 3rd quarter)

4th Quarter

- Conduct an assessment of NOAA/NWS ice products and services.
- Coordinate the dissemination of gridded Great Lakes marine data with Environment Canada.

Integrated AWIPS Requirements

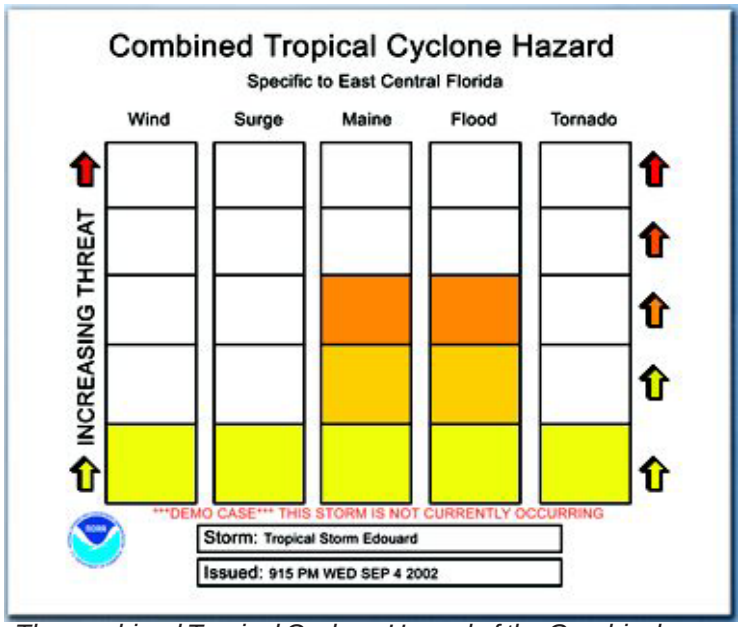
- ✓ Include Tropical Cyclone Watches and Warning Headlines from National Hurricane Center (NHC) in other products.
- ✓ Include the System on AWIPS for Forecasting and Evaluation of Seas and Lakes (SAFESEAS).
- ✓ Include Gridded Ice Analyses from National Ice Center (NIC).
- ✓ Include Global Sea Surface Temperature Analysis.

Science and Technology Requirements

Provide gridded guidance from Wave Watch III global and regional models for the primary and secondary swell height, direction, and period.

Training

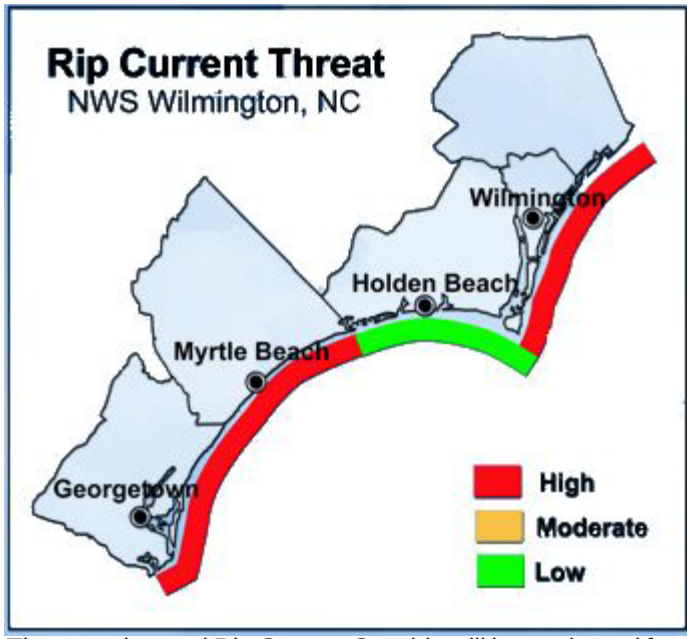
- ✓ Development of marine PDS: **http://meted.ucar.edu/topics_marine.php**
- ✓ Annual regional marine workshops
- ✓ Annual Hurricane Liaison Team training which includes NWS and Federal Emergency Management Agency (FEMA)
- ✓ Rip Current forecaster training module.



The combined Tropical Cyclone Hazard of the Graphical Hurricane Local Statement will be nationally implemented as a new product in 2004.

Outreach

- ✓ Annual marine and tropical cyclone customer and partner meetings
- ✓ Town meetings at boat and trade show events
- ✓ Rip current outreach and education materials and events
- ✓ Hurricane Awareness Week
- ✓ National Safe Boating Week
- ✓ Articles for marine related magazines.



The experimental Rip Current Graphic will be evaluated for proposed national implementation as a product new in 2004.

Dissemination

- ✓ Expand prototyping of cell-phone compatible marine and tropical cyclone products.
- ✓ Prototype a remote radiofax monitoring system.

Verification

- ✓ Complete migration of national marine verification program from NCEP to OCWWS.
- ✓ Develop initial programmatic phase to verify NDFD Marine Forecast grids.

Regional Initiatives

Eastern

- ✓ Collaborate with the National Data Buoy Center (NDBC) to develop buoy and Coastal Marine Automation Network (C-MAN) station climatology for sites. (Milestone met, 2nd quarter)
- ✓ Coordinate two Tropical Prediction Center/ National Hurricane Center (TPC/NHC) hurricane forecaster office visits.
- ✓ Expand participation in the Rip Current Program.
- ✓ Conduct marine forecaster training workshop.
- ✓ Coordinate two forecaster exchanges between two coastal WFOs and NCEP Ocean Prediction Center (OPC).

Southern

- ✓ Host the Hurricane Preparedness Tour at selected coastal locations.
- ✓ Conduct marine forecaster training workshop. (Milestone met, 2nd quarter)
- ✓ Expand forecast methodologies and techniques for producing graphical marine products using gridded fields to all coastal WFOs.
- ✓ Implement procedures for disseminating marine products via Internet-Ready cellular phones at two coastal WFOs.

Central

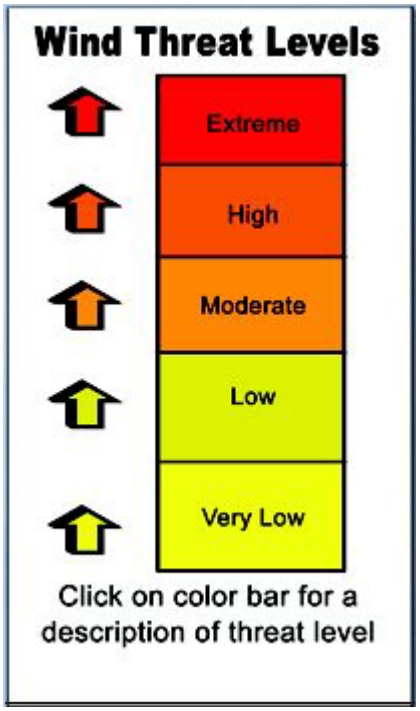
- ✓ Represent NWS at Lake Carrier and Great Lakes Ship Captains Organization meetings. (Milestone met, 1st quarter)
- ✓ Conduct Central Region/Eastern Region marine forecaster training workshop. (Milestone met, 1st quarter)
- ✓ Collaborate with a wide spectrum of NWS services with all NOAA agencies including the Great Lakes Environmental Research Laboratory (GLERL). (Milestone met, 2nd quarter)
- ✓ Coordinate forecaster familiarization visits between WFO Detroit and GLERL. (Milestone met, 2nd quarter)
- ✓ Analyze the benefits and deficiencies of expanding Port Meteorological Officer duties of WFO Chicago to all five Great Lakes. (Milestone met, 2nd quarter)
- ✓ Develop requirements for expanding the Great Lakes observation network. (Milestone met, 2nd quarter)
- ✓ Evaluate NDFD methodologies for the Great Lakes marine environment.
- ✓ Investigate the feasibility and potential value of an Entrance or Port Forecast. (Milestone met, 2nd quarter)

Western

- ✓ Conduct annual WFO marine weather workshops for customers. (Milestone met, 1st and 2nd quarter)
- ✓ Develop and implement a standardized customer feedback mechanism at the WFO level. (Milestone met, 2nd quarter)
- ✓ Implement a consistent regional policy for issuing and headlining High Surf Advisory.
- ✓ Conduct marine forecast training workshop.
- ✓ Establish warning criteria for high surf.

Alaska

- ✓ Plan to develop a prototype digital marine forecast matrix at a selected office
- ✓ Conduct marine customer outreach and partner workshops.
- ✓ Evaluate customer needs for NWR broadcasts in coastal areas.
- ✓ Conduct a regional assessment of WFO marine services and forecast performance.
- ✓ Evaluate impacts of new marine observingsystems.
- ✓ Continue assessment of the impacts of new marine observing systems.



The Experimental Graphical Hurricane Local Statement will be nationally implemented as a new tropical product in 2004.

Pacific

- ✓ Conduct annual marine customer workshop. (Milestone met, 2nd quarter)
- ✓ Implement Surf Zone Product for Guam and the Commonwealth of Northern Mariana Islands.
- ✓ Convert tropical cyclone brochures into six indigenous languages.
- ✓ Implement Sea State Forecasts for 48- and 72-hours.
- ✓ Transition from radiofax dissemination of numerical model guidance to WFO generated products.
- ✓ Implement a Tropical Cyclone Danger Area product for WFO Honolulu's entire marine area of responsibility.
- ✓ Install surf markers at designated surf reporting sites in Guam's area of responsibility.
- ✓ Expand Guam's surf reporting network.
- ✓ Sponsor a water safety summit conference in cooperation with the Guam Visitors Bureau.
- ✓ Conduct annual Tropical Cyclone and Disaster Preparedness workshops throughout Micronesia.

NCEP Ocean Prediction Center and Tropical Analysis and Forecast Branch

- ✓ Unify NCEP marine operations.
- ✓ Establish partnerships to integrate customer outreach efforts.
- ✓ Expand dissemination of OPC products to low-bandwidth devices.
- ✓ Implement gridded significant wave height and wave period products for the high seas areas.
- ✓ Assess need for reconfiguration of the Hudson Canyon to Baltimore Canyon marine zone based on customer feedback.

NCEP TPC/NHC

- ✓ Begin test and evaluation of second round of United States Weather Research and Joint Hurricane Test Bed projects. (Milestone met, 1st quarter)
- ✓ Conduct three Introduction to Hurricane Preparedness Workshops for local emergency managers. (Milestone met, 2nd quarter)
- ✓ Conduct hurricane awareness tour to Caribbean countries, Mexico, and along the U.S. Gulf Coast, with emphasis on outreach and public education.
- ✓ Conduct an international Regional Area IV Workshop for meteorologists on hurricane forecasting and warning.
- ✓ Develop gridded Tropical Cyclone Forecast/ Advisories (TCM) for the Central Pacific Hurricane Society (CPHC) and Guam.

Contact Information

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